



Serial/Patent No.: 10/039,618
Filing Date: 1/4/02
Atty Docket: SPLX.P0049
Applicant(s): Steven Teig

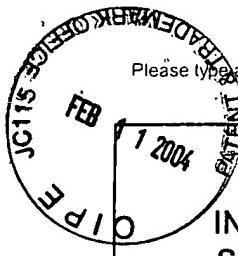
Atty/Secty: MA/sl
Date Mailed: 4/23/2003

TITLE: Method and Apparatus for Generating Routes for Groups of Node Configurations.

The following has been received by the U.S. Patent & Trademark Office on the date stamped hereon:

1. Transmittal Form
2. Information Disclosure Statement (2 pages)
3. Form PTO-1449 (5 pages)
4. (87) cited references





Please type a plus sign (+) inside this box

4/23/03

PTO/SB/08A (08-00) - MODIFIED
Applicable for use through 10/31/2002. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2811
				Examiner Name	
-Sheet	1	of	1	Attorney Docket Number	SPLX.P0049

U.S. PATENT DOCUMENTS					
Examiner's Initials	Cite No. ¹	U.S. Patent Document Number	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication MM-DD-YYYY
	1.	2001/0003843	A1	Scepanovic et al.	06-14-01
	2.	4,615,011		Linsker	09-30-86
	3.	4,673,966		Shimoyama	06-16-87
	4.	4,782,193		Linsker	11-01-88
	5.	4,855,929		Nakajima	08-08-89
	6.	5,097,422		Corbin II et al.	03-17-92
	7.	5,251,147		Finnerty	10-05-93
	8.	5,281,151		Arima et al.	01-25-94
	9.	5,360,948		Thornberg	11-01-94
	10.	5,375,069		Satoh et al.	12-20-94
	11.	5,532,934		Rostoker	07-02-96
	12.	5,578,840		Scepanovic	11-26-96
	13.	5,633,479		Hirano	05-27-97
	14.	5,634,093		Ashida et al.	05-27-97
	15.	5,636,125		Rostoker et al.	06-03-97
	16.	5,650,653		Rostoker et al.	07-22-97
	17.	5,657,242		Sekiyama et al.	08-12-97
	18.	5,723,908		Fuchida et al.	03-03-98
	19.	5,742,086		Rostoker et al.	04-21-98
	20.	5,757,656		Hershberger et al.	05-26-98
	21.	5,777,360		Rostoker et al.	07-07-98
	22.	5,811,863		Rostoker et al.	09-22-98
	23.	5,822,214		Rostoker et al.	10-13-98
	24.	5,859,449		Kobayashi et al.	01-12-99
	25.	5,898,597		Scepanovic et al.	04-27-99

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Please type a plus sign (+) inside this box " + "

FEB 1 2004

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2811
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	SPLX.P0049

U.S. PATENT DOCUMENTS						
26.	5,914,887		Scepanovic et al.	06-22-99		
27.	5,973,376		Rostoker et al.	10-26-99		
28.	6,035,108		Kikuchi	03-07-00		
29.	6,058,254		Scepanovic et al.	05-02-00		
30.	6,067,409		Scepanovic et al.	05-23-00		
31.	6,068,662		Scepanovic et al.	05-30-00		
32.	6,123,736		Pavsic et al.	09-26-00		
33.	6,134,702		Scepanovic et al.	10-17-00		
34.	6,155,725		Scepanovic et al.	12-05-00		
35.	6,175,950	B1	Scepanovic	01-16-01		
36.	6,216,252	B1	Dangelo et al.	04-10-01		
37.	6,230,306	B1	Raspopovic et al.	05-08-01		
38.	6,247,167	B1	Raspopovic et al.	06-12-01		
39.	6,260,179	B1	Ohsawa et al.	07-10-01		
40.	6,262,487	B1	Igarashi et al.	07-17-01		
41.	6,289,495	B1	Raspopovic	09-11-01		
42.	6,301,686	B1	Kikuchi et al.	10-09-01		
43.	6,327,694	B1	Kanazawa	12-04-01		
44.	6,378,121	B2	Hiraga	04-23-02		
45.	6,385,758	B1	Kikuchi et al.	05-07-02		
46.	6,401,234	B1	Alpert et al.	06-04-02		
47.	6,405,358	B1	Nuber	06-11-02		
48.	6,412,097	B1	Kikuchi et al.	06-25-02		
49.	6,412,102	B1	Andreev et al.	06-25-02		
50.	6,436,804	B2	Igarashi et al.	08-20-02		
51.	6,446,245	B1	Xing et al.	09-03-02		
52.	6,463,575	B1	Takahashi	10-08-02		

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Please type or sign (+) inside this box +

Substitute for form 1449A/PTO					Application Number	10/039,618
					Filing Date	1/4/02
					First Named Inventor	Steven Teig
					Group Art Unit	2811
					Examiner Name	
Sheet	3	of	3		Attorney Docket Number	SPLX.P0049

U.S. PATENT DOCUMENTS

	53.	6,516,455	B1	Teig et al.	02-04-03	
	54.	2003/0025 205	A1	Shively	02-06-03	

FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No. ¹	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ²	Number ⁴	Kind Code (if known) ⁵			
	55.	JP	64-15947		Ouchi	01-19-89	
	56.	JP	04000677		Fujiwara et al.	01-1992	

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

FEB 11 2004
U.S. PATENT AND TRADEMARK OFFICE

Please type or plus sign (+) inside this box []

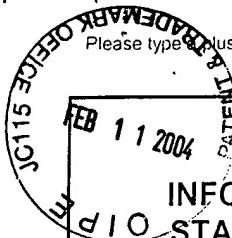
Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number 10/039,618 Filing Date 1/4/02 First Named Inventor Steven Teig Group Art Unit 2811 Examiner Name . Sheet 4 of 4 Attorney Docket Number SPLX.P0049
---	--	--	--	--

NON PATENT LITERATURE DOCUMENTS		
Examiner's Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	57.	A.H. Farrahi, et al., Quality of EDA CAD Tools: Definitions, Metrics and Directions, Quality Electronic Design, 2000, Proceedings of the first International Symposium on March 2000, pp 395-405.
	58.	A. Vannelli, et al., An adaptation of the interior point method for solving the global routing problem, 2/1991, IEEE pp 193-203.
	59.	B. Berger, et al., Nearly Optimal Algorithms and Bounds for Multilayer Channel Routing, Journal of the Association for Computing Machinery, pp. 500-542, March 1995.
	60.	C. Chiang, et al., Wirability of Knock-Knee Layouts with 45° Wires, IEEE Transactions on Circuits and Systems, Vol. 38, Issue 6, pp 613-624, June 1991.
	61.	G. Overtone, EDA Underwriter 2 Finding Space in a Multi Layer Board, Electronic Engineering, Morgan-Grampian LTD, vol. 67, No. 819, pp 29-30.
	62.	G.D. Hachtel et al., Linear Complexity Algorithms for Hierarchical Routing, 1/89, IEEE pp 64-80.
	63.	J.D. Cho, et al., Four-Bend Top Down Global Routing, IEEE, pp 793-802, 1998.
	64.	J. Su et al., Post Route Optimization for Improved Yield Using Rubber-Band Wiring Model, 1997 International Conference on Computer-Aided Design, pp 700-706, November 1997.
	65.	J. Vicente, RSR: A New Rectilinear Steiner Minimum Tree Approximation for FPGA Placement and Global Routing, Proceedings of the 24 th Euro Micro Conference, pp 192-195, August 1998.
	66.	K. Powers et al., The 60° Grid: Routing Channels in Width d/square root 3, VLSI, 1991, Proceedings., First Great Lakes Symposium on Kalamazoo, MI, USA, pp 214-291, March 1991.
	67.	M. Alexander et al., Performance-Oriented Placement and Routing for field-programmable gate arrays, Proceedings of the European Design Automation Conference, pp 80-85, 1995.
	68.	M. Alexander et al., Placement and Routing for Performance-Oriented FPGA Layout, VLSI Design, Vol. 7, No. 1, 1998.
	69.	M. Igarashi et al., A Diagonal-Interconnect Architecture and Its Application to RISC Core Design, 2002 IEEE Solid-State Circuits Conference, pp 210-460, February 2002.
	70.	P. Dood, et al., A Two-Dimensional Topological Compactor with Octagonal Geometry, 28 th ACM/IEEE Design Automation Conference, pp 727-731, July 1991
	71.	P. Parakh, et al., Congestion Driven Quadratic Placement, Proceedings of Design Automation Conference, 1998, pp 275-278.
	72.	R. Putatunda et al., VITAL: Fully Automatic Placement Strategies for Very Large Semicustom Designs, Proceedings of the International Conference on Computer Design: VLSI in Computers and Processors, pp 434-439 October 1988.

Examiner Signature		Date Considered
--------------------	--	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



Please type a plus sign (+) inside this box []

PTO/SB/08A (08-00) - MODIFIED
App. for use through 10/31/2002. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2811
				Examiner Name	
Sheet	5	of	5	Attorney Docket Number	SPLX.P0049

NON PATENT LITERATURE DOCUMENTS		
73.	S. Dutt, et al., Probability-Based Approaches to VLSI Circuit Partitioning, IEEE Trans. On Computer Aided Design of IC's and Systems, Vol. 19, No. 5, May 2000, pp 534-549.	
74.	Y. Sekiyama et al., Timing-Oriented Routers for PCB Layout Design of High-Performance Computers, International Conference on Computer Aided Design, pp 332-335, November 1991.	
75.	C. Leiserson et al., Algorithm for Routing and Testing Routability of Planar VLSI Layouts, pp 69-78, May 1985.	
76.	S. Das et a., Channel Routing in Manhattan-Diagonal Model, 9 th International Conference on VLSI Design, January 1996. pp 43-48.	
77.	W. Wei-Ming Dai et a., Routability of a Rubber-Band Sketch. 28 th ACM/IEEE Design Automation Conference, 1991. pp 45-65.	
78.	H. Chen, Routing L-Shaped Channels in Nonslicing-Structure Placement. 24 th ACM/IEEE Design Automation Conference, pp 152-165, 1987.	
79.	I. Tollis, Techniques for Wiring in Non-Square Grids, pp 66-69. May 1989.	
80.	E. Lodi et al., A 2d Channel Router for the Diagonal Model, pp 111-125, April 1991.	
81.	E. Lodi et al., Routing in Times Square Mode, pp 41-48, June 1990.	
82.	K. Cheng-Kok et al., Manhattan or Non Manhattan? A Study of Alternative VLSI Routing Architectures. pp 47-52, 2000	
83.	E. Lodi et al., Routing Multiterminal Nets in a Diagonal Model, pp 899-902, 1988.	
84.	D. Staepelaere et al., Surf: A Rubber-Band Routing System for Multichip Modules. pp 18-26, 1993.	
85.	S. Das et al., Routing of L-Shaped Channels, Switch boxes and Staircases in Manhattan-Diagonal Model, pp 65-70m January 1998.	
86.	W. Schiele et al., A Gridless Router for Industrial Design Rule, 27 th ACM/IEEE Design Automation Conference, pp 626-631, 1990.	
87.	J. Nester, A New Look at Hardware Maze Routing, Proceedings of the 12 th ACM Symposium on Great Lakes Symposium on VLSI, pp 142-147, April 2002.	

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.



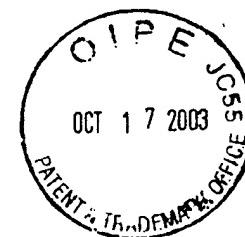
Serial/Patent No.: 10/039,618
Filing Date: 1/4/02
Atty Docket: SPLX.P0049
Applicant(s): Steven Teig

Atty/Secty: MA/ka
Date Mailed: 10/16/2003

TITLE: Method and Apparatus for Generating Routes for Groups of Node Configurations.

The following has been received by the U.S. Patent & Trademark Office on the date stamped hereon:

1. Transmittal Form
2. Information Disclosure Statement (2 pages)
3. Form PTO-1449 (4 pages)
4. (47) cited references



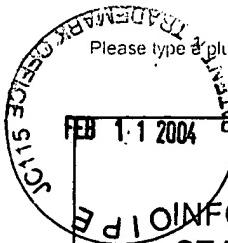
10/14/03

Based on PTO/SB/08 a & b (05-03)

Approved for use through 05/31/2003. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Please type a plus sign (+) inside this box +

FEB 1 1 2004

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	1	of	4	Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2811
				Examiner Name	
				Attorney Docket Number	SPLX.P0049

RELATED U.S. PATENT DOCUMENTS

Examiner Initials	Cite No. ¹	U.S. Patent Document Number	Date of filing MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Related Application Data
	1.	2003/0079193	12-07-2001	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	2.	2003/0018947	12-07-2001	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	3.	2002/0147958	10-19-2001	Steven Teig et al.	Parent application per preliminary amendment dated 2/19/03.
	4.	2003/0063614	01-04-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	5.	2003/0063568	01-04-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	6.	2003/0101428 S/N 10/040,915	01-05-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	7.	Preliminary Amendment S/N 10/040,915	01-05-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0101428 does not accurately reflect the claims of S/N 10/040,915.
	8.	2002/0166105 S/N 10/040,948	01-05-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	9.	Preliminary Amendment S/N 10/040,948	01-05-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2002/0166105 does not accurately reflect the claims of S/N 10/040,948.
	10.	2003/0043827 S/N 10/040,953	01-05-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	11.	Preliminary Amendment S/N 10/040,953	01-05-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0043827 does not accurately reflect the claims of S/N 10/040,953.
	12.	2003/0023943 S/N 10/040,954	01-05-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number(optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

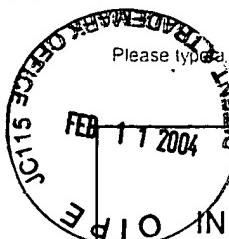
This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Please type a plus sign (+) inside this box +

Based on PTO/SB/08 a & b (05-03)

Approved for use through 05/31/2003. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number



Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2811
				Examiner Name	
Sheet	2	of	4	Attorney Docket Number	SPLX.P0049

RELATED U.S. PATENT DOCUMENTS

	13.	Preliminary Amendment S/N 10/040,954	01-05-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0023943 does not accurately reflect the claims of S/N 10/040,954.
	14.	2003/0066042 S/N 10/040,963	01-05-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	15.	Preliminary Amendment S/N 10/040,963	01-05-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0066042 does not accurately reflect the claims of S/N 10/040,963.
	16.	2002/0174412 S/N 10/041,942	01-07-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	17.	Preliminary Amendment S/N 10/041,942	01-07-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2002/0174412 does not accurately reflect the claims of S/N 10/041,942.
	18.	2003/0088844 S/N 10/041,957	01-07-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	19.	Preliminary Amendment S/N 10/041,957	01-07-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0088844 does not accurately reflect the claims of S/N 10/041,957.
	20.	2002/0199165 S/N 10/046,864	01-13-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	21.	Preliminary Amendment S/N 10/046,864	01-13-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2002/0199165 does not accurately reflect the claims of S/N 10/046,864.
	22.	2003/0066043	01-13-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
	23.	2003/0115566	01-13-2002	Steven Teig	Application with some of the same parent provisional and non-provisional applications.
	24.	2003/0056187 S/N 10/047,982	01-14-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.

Examiner Signature		Date Considered
--------------------	--	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number(optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

3

of

4

Application Number	10/039,618
Filing Date	1/4/02
First Named Inventor	Steven Teig
Group Art Unit	2811
Examiner Name	

Attorney Docket Number

SPLX.P0049

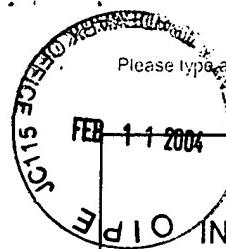
RELATED U.S. PATENT DOCUMENTS

25.	Preliminary Amendment S/N 10/047,982	01-14-002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0056187 does not accurately reflect the claims of S/N 10/047,982
26.	2003/0066044	01-13-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
27.	2003/0066045	01-13-2002	Steven Teig et al.	Application with some of the same parent provisional and non-provisional applications.
28.	2003/0088845 S/N 10/047,978	01-13-2002	Steven Teig et al.	CIP of the present application per the preliminary amendment dated 2/19/03.
29.	Preliminary Amendment S/N 10/047,978	01-13-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0088845 does not accurately reflect the claims of S/N 10/047,978.
30.	2002/0133798	12-06-2000	Steven Teig et al.	Application regarding related placement technology.
31.	2002/0100007	12-06-2200	Steven Teig et al.	Application regarding related placement technology.
32.	2002/0073390 S/N 09/737,210	12-13-2000	Steven Teig et al.	Application regarding related placement technology.
33.	Preliminary Amendment S/N 09/737,210	12-13-2000	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2002/0073390 does not accurately reflect the claims of S/N 09/737,210
34.	S/N 09/737,220	12-13-2000	Steven Teig et al.	Application regarding related placement technology.
35.	S/N 09/737,245	12-13-2000	Steven Teig et al.	Application regarding related placement technology.
36.	S/N 09/739,460	12-15-2000	Steven Teig et al.	Application regarding related placement technology.
37.	2002/0124231 S/N 09/739,580	12-15-2000	Steven Teig et al.	Application regarding related placement technology.
38.	Preliminary Amendment S/N 09/739,580	12-15-2000	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2002/0124231 does not accurately reflect the claims of S/N 09/739,580.

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number(optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 1G if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



Please type a plus sign (+) inside this box +

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number

FEB 11 2004

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2811
				Examiner Name	
Sheet	4	of	4	Attorney Docket Number	SPLX.P0049

RELATED U.S. PATENT DOCUMENTS

39.	S/N 09/739,589	12-15-2000	Steven Teig et al.	Application regarding related placement technology.
40.	S/N 09/742,171	12-19-2000	Steven Teig et al.	Application regarding related placement technology.
41.	2003/0121015 S/N 09/745,067	12-19-2000	Steven Teig et al.	Application regarding related placement technology.
42.	Preliminary Amendment S/N 09/745,067	12-19-2000	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0121015 does not accurately reflect the claims of S/N 09/745,067.
43.	2002/0069397	01-13-2002	Steven Teig et al.	Application regarding related placement technology.
44.	2002/0170027	02-20-2002	Steven Teig et al.	Application regarding related placement technology.
45.	2002/0157075	02-20-2002	Steven Teig et al.	Application regarding related placement technology.
46.	2003/0088841 S/N 10/329,241	12-23-2002	Steven Teig et al.	Application regarding related placement technology.
47.	Preliminary Amendment S/N 10/329,241	12-23-2002	Steven Teig et al.	This Preliminary Amendment is submitted as the publication 2003/0088841 does not accurately reflect the claims of S/N 10/329,241.

Examiner Signature	Date Considered
--------------------	-----------------

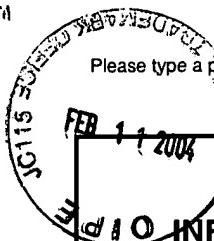
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number(optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box →

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number



Substitute for form 1449A/PTO

**10 INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

FEB 11 2004				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Lin, Sun J.
Sheet	1	of	7	Attorney Docket Number	SPLX.P0049

U.S. PATENT DOCUMENTS

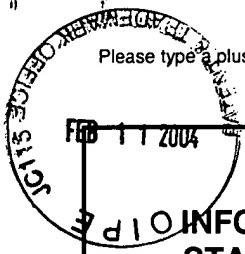
Examiner* Initials	Cite No. ¹	U.S. Patent Document Number	Kind Code ² (if known)	Date of Publication MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	2001/0009 031	A1	07-19-2001	Nitta et al.	
	2.	2002/0182 844	A1	12-05-2002	Igarashi et al.	
	3.	2003/0005 399	A1	01-02-2003	Igarashi et al.	
	4.	5,267,176		11-30-1993	Antreich et al.	
	5.	5,566,078		10-15-1996	Ding et al.	
	6.	5,618,744		04-08-1997	Suzuki et al.	
	7.	5,635,736		06-03-1997	Funaki et al.	
	8.	5,637,920		06-10-1997	Loo	
	9.	5,640,327		06-17-1997	Ting	
	10.	5,663,891		09-02-1997	Bamji et al.	
	11.	5,757,089		05-26-1998	Ishizuka	
	12.	5,784,289		07-21-1998	Wang	
	13.	5,838,583		11-17-1998	Varadarajan et al.	
	14.	5,889,677		03-30-1999	Yasuda et al.	
	15.	5,980,093		11-09-1999	Jones et al.	
	16.	6,070,108		05-30-2000	Andreev et al.	
	17.	6,128,767		10-03-2000	Chapman	
	18.	6,150,193		11-21-2000	Glenn	
	19.	6,209,123	B1	03-27-2001	Maziasz et al.	
	20.	6,219,832	B1	04-17-2001	Buzbee	

Examiner Signature		Date Considered
-----------------------	--	--------------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Please type a plus sign (+) inside this box → +

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number

FEB 11 2004

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Application Number	10/039,618			
Filing Date	1/4/02			
First Named Inventor	Steven Teig			
Group Art Unit	2825			
Examiner Name	Lin, Sun J.			
Sheet	2	of	7	
Attorney Docket Number				SPLX.P0049

U.S. PATENT DOCUMENTS

21.	6,226,560	B1	05-01-2001	Hama et al.	
22.	6,249,902	B1	06-19-2001	Igusa et al.	
23.	6,253,363	B1	06-26-2001	Gasanov et al.	
24.	6,307,256		10-23-2001	Chiang et al.	
25.	6,316,838	B1	11-13-2001	Ozawa et al.	
26.	6,324,674	B2	11-27-2001	Andreev et al.	
27.	6,324,675	B1	11-27-2001	Dutta et al.	
28.	6,327,693	B1	12-04-2001	Cheng et al.	
29.	6,330,707	B1	12-11-2001	Shinomiya et al.	
30.	6,407,434	B1	06-18-2002	Rostoker et al.	
31.	6,415,422	B1	07-02-2002	Mehrotra et al.	
32.	6,442,743	B1	08-27-2002	Sarrafzadeh et al.	
33.	6,448,591	B1	09-10-2002	Juengling	
34.	6,473,891	B1	10-29-2002	Shively	
35.	6,480,991	B1	11-12-2002	Cho et al.	
36.	6,519,751	B2	02-11-2003	Sriram et al.	
37.	6,543,043	B1	04-01-2003	Wang et al.	
38.	6,546,540	B1	04-08-2003	Igarashi et al.	
39.	6,557,145	B2	04-29-2003	Boyle et al.	
40.	6,567,967	B2	05-20-2003	Greidinger et al.	

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box →

FEB 11 2004

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Lin, Sun J.
Sheet	3	of	7	Attorney Docket Number	SPLX.P0049

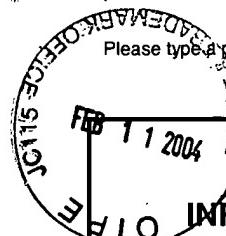
FOREIGN PATENT DOCUMENTS							
Examiner* Initials	Cite No. ¹	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴				
41.	JP	411296560	A	Matsumoto et al.	10-29-1999	with English translation of Abstract;	
42.	JP	2000-82743	A	Igarashi et al.	03-21-2000	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
43.	JP	H03-173471	A	Tawada et al.	07-26-1991	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
44.	JP	H05-243379	A	Masako Kubota	09-21-1993	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
45.	JP	H05-102305	A	Akihiro Sato	04-23-1993	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓
46.	JP	H07-86407	A	Shinpei Miura	03-31-1995	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓

Examiner Signature	Date Considered	
-----------------------	--------------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Please type a plus sign (+) inside this box →

Based on PTO/SB/08 a & b (05-03)

Approved for use through 05/31/2003. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number

11 2004 Substitute for form 1449A/PTO				Application Number	10/039,618
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Lin, Sun J.
Sheet	4	of	7	Attorney Docket Number	SPLX.P0049

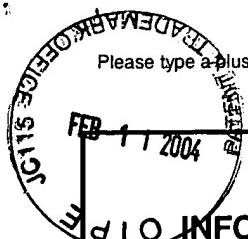
FOREIGN PATENT DOCUMENTS							
47.	JP	H09-162279	A	Masaaki Yoshida	06-20-1997	with Japanese Patent Office's English translation of Abstract; and with English translation of the application.	✓

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Please type a plus sign (+) inside this box →

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Lin, Sun J.
Sheet	5	of	7	Attorney Docket Number	SPLX.P0049

FOREIGN PATENT DOCUMENTS

NON PATENT LITERATURE DOCUMENTS

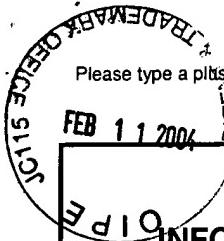
Examiner* Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. ^{T⁶}
	48.	Ahuja, R. et al., Faster Algorithms for the Shortest Path Problem, Journal of the Association for Computing Machinery, vol. 37, No. 2, April 1990, pp. 213-223.
	49.	Brady, L. et al., Channel Routing on a 60° Grid, extended abstract, pp. 956-931.
	50.	Brambilla, A. et al., Statistical Method for the Analysis of Interconnects Delay in Submicrometer Layouts, IEEE, 8/2001, pp. 957-966.
	51.	Carothers, K., A Method of Measuring Nets Routability for MCM's General Area Routing Problems, 1999, pp. 186-192.
	52.	Chen, H. et al., Physical Planning of On-Chip Interconnect Architectures, 2002, IEEE, International Conference, pp. 30-35.
	53.	Cheng, K., Steiner Problem in Octilinear Routing Model, a Thesis Submitted for the Degree of Master of Science, National University Singapore, 1995, pp. 1-122.
	54.	Chip Model with Wiring Cost Map, August 1983, IBM Technical Disclosure Bulletin, vol. 26, iss. 3A, pp. 929-933.
	55.	Cong, J. et al., Efficient Heuristics for the Minimum Shortest Path Steiner Arborescence Problem with Applications to VLSI Physical Design, Cadence Design Systems and UCLA Computer Science Department, pp.88-95.
	56.	Cong, J. et al., Performance-Driven Multi-Layer General Routing for PCB/MCM Designs, UCLA Computer Science Department, 1998, pp. 356-361.
	57.	Enbody, R. et al., Near-Optimal n-Layer Channel Routing, 23 rd Design Automation Conference, 1986, pp. 708-714.
	58.	Fang, S. et al., Constrained Via Minimization with Practical Considerations for Multi-Layer VLSI/PCB Routing Problems, 28 th ACM/IEEE Design Automation Conference, 1991, pp. 60-65.
	59.	Horn, I. et al., Estimation of the Number of Routing Layers and Total Wirelength in a PCB Through Wiring Distribution Analysis, 1996, pp. 1-6.
	60.	Hong, X. et al., Performance-Driven Steiner Tree Algorithms for Global Routing, 30 th ACM/IEEE Design Automation Conference, 1993, pp. 177-181.

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Please type a plus sign (+) inside this box → +

Based on PTO/SB/08 a & b (05-03)
Approved for use through 05/31/2003. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Lin, Sun J.
Sheet	6	of	7	Attorney Docket Number	SPLX.P0049

FOREIGN PATENT DOCUMENTS

61.	Hu, J. et al., A Timing-Constrained Algorithm for Simultaneous Global Routing of Multiple Nets, IEEE/ACM International Conference on Computer Aided Design. ICCAD – 2000. IEEE/ACM Digest of Technical Papers (CAT. NO.00CH37140), Proceedings of International Conference on Computer Aided Design (ICCAD), San Jose, CA, USA, 5-9 Nov. 2000, pp.99-103.
62.	Kastner, R. et al, Predictable Routing, IEEE/ACM International Conference on Computer Aided Design. ICCAD – 2000. IEEE/ACM Digest of Technical Papers (CAT. NO.00CH37140), Proceedings of International Conference on Computer Aided Design (ICCAD), San Jose, CA, USA, 5-9 Nov. 2000. pp. 110-113.
63.	Khoo, K. et al., An Efficient Multilayer MCM Router Based on Four-Via Routing, 30 th ACM/IEEE Design Automation Conference, 1993, pp. 590-595.
64.	Lillis, J. et al., Table-Lookup Methods for Improved Performance-Driven Routing, 1998, pp. 368-373.
65.	Lipski, W. et al., A Unified Approach to Layout Wirability, Mathematical Systems Theory, 1987, pp. 189-203.
66.	Lodi, E. et al., A Preliminary Study of a Diagonal Channel-Routing Model, Algorithmica, 1989, pp.585-597.
67.	Lodi, E. et al., Lecture Notes in Computer Science, A 4d Channel Router for a Two Layer Diagonal Model, pp. 464-476, July 1988.
68.	Naclerio, N. et al., Via Minimization for Gridless Layouts, 24 th ACM/IEEE Design Automation Conference, 1987, pp. 159-165.
69.	Nam, G. et al, Satisfiability-Based Layout Revisited: Detailed Routing of Complex FPGAs Via Search-Based Boolean SAT, 1999, pp. 167-175..
70.	Oh, J. et al., Constructing Lower and Upper Bounded Delay Routing Trees Using Linear Programming, 33 rd Design Automation Conference, 1996.
71.	Partitioning Logic on to Graph Structure, IBM Technical Disclosure Bulletin, February 1990, vol. 32, iss. 9A, pp. 469-475.
72.	Phillips, N., Channel Routing by Constraint Logic, Department of Computer Science Southern Illinois University, ACM, 1992.
73.	Takashima, Y. et al, Routability of FPGAs with Extremal Switch-Block Structures, IEICE Trans. Fundamentals, vol. E81-A, No. 5, May 1998, pp. 850-856.

Examiner Signature	Date Considered	
--------------------	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Please type a plus sign (+) inside this box →

Based on PTO/SB/08 a & b (05-03)

Approved for use through 05/31/2003. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of
information unless it contains a valid OMB control number

FEB 11 2004

Substitute for form 1449A/PTO				Application Number	10/039,618
				Filing Date	1/4/02
				First Named Inventor	Steven Teig
				Group Art Unit	2825
				Examiner Name	Lin, Sun J.
Sheet	7	of	7	Attorney Docket Number	SPLX.P0049

FOREIGN PATENT DOCUMENTS

74.	Thakur, S. et al., Algorithms for a Switch Module Routing Problem, 1994, pp. 265-270.
75.	Theune, D. et al., HERO: Hierarchical EMC-constrained routing, 11/1992, IEEE pp 468-472
76.	Tseng, H., Timing and Crosstalk Driven Area Routing, pp. 378-381.
77.	Wang, D., Novel Routing Schemes for IC Layout, Part I: Two-Layer Channel Routing, 28 th ACM/IEEE Automation Conference, 1991, pp. 49-53.
78.	Wang, M. et al., Modeling and Minimization of Routing Congestion, Jan. 2000, IEEE proceedings of ASP-DAC, Asia and South Pacific, pp. 185-190.
79.	Wood, G. et al., FPGA Routing and Routability Estimation Via Boolean Satisfiability, Department of Electrical and Computer Engineering Carnegie Mellon University, Pittsburgh, PA, pp. 119-125.
80.	Zhang, C.X. et al., Floorplan Design Using a Hierarchical Neural Learning Algorithm, IEEE, 6/1991. pp. 2060-2063.
81.	Zhou, H. et al., An Optimal Algorithm for River Routing with Crosstalk Constraints, 1996.
82.	Zhou, H. et al., Global Routing with Crosstalk Constraints, Department of Computer Sciences, University of Texas, 1998, pp. 374-377.
83.	Zhou, H. et al., Optimal River Routing with Crosstalk Constraints, ACM Transactions on Design Automation of Electronic Systems, vol. 3, No. 3, July 1998, pp. 496-514.

Examiner Signature	Date Considered
--------------------	-----------------

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number(optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.